



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,485	03/03/2006	Eishin Kato	80110(302725)	9937
21874 7590 12/30/2009 EDWARDS ANGELL PALMER & DODGE LLP P.O. BOX 55874 BOSTON, MA 02205				
EXAMINER				
MI, QIUWEN				
ART UNIT		PAPER NUMBER		
1655				
MAIL DATE		DELIVERY MODE		
12/30/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/570,485

Applicant(s)

KATO ET AL.

Examiner

QIUWEN MI

Art Unit

1655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-20 is/are pending in the application.
4a) Of the above claim(s) 6 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 4, 5 and 7-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 01 March 0306 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

CONTINUED EXAMINATIONS

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/6/2009 has been entered.

Applicant's amendment and Declaration filed on 10/6/2009 is acknowledged, with the cancellation of claim 3. Claims 1, 2, and 4-20 are pending. Claim 6 is withdrawn. **Claims 1, 2, 4, 5, and 7-20 are examined on the merits.**

Any rejection that is not reiterated is hereby withdrawn.

Claim Objections

Claims 1, 2, 4, 5, and 7-20 are objected to because of the following informalities:

The wordings of the claim language are very awkward and redundant. For instance, claim 1 recites "Gnetum extract characterized in that the extract contains extracted material that is extracted from Gnetum gnemon seeds or Gnetum material containing Gnetum gnemon seeds with an aqueous extractant containing 15 to 80 % polar organic solvent, wherein the extract contains a stilbenoid showing antimicrobial and antioxidative action". Applicant is suggested to recite "an aqueous extract of Gnetum gnemon seeds containing stilbenoid with antimicrobial and antioxidative activity, wherein the seeds are extracted with 15 to 80 % polar organic solvent".

All other cited claims depend directly or indirectly from objected claims and are, therefore, also, objected for the reasons set forth above.

Claim Rejections –35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, and 7-20 are newly rejected under 35 U.S.C. 103(a) as being unpatentable over Boralle et al (Oligostibenoids from *Gnetum venosum*, *Phytochemistry*, 34 (5): 1403-1407, 1993), in view of Berry (Cyclopropene fatty acids in *Gnetum gnemon* (L.) seeds and leaves, *Journal of the Science of Food and Agriculture*, (1980) Vol. 31, No. 7, pp. 657-662), and further in view of Iliya et al (Iliya et al, Stilbene derivatives from two species of *Gnetaceae*, *Chem. Pharm. Bull.* 50 (6) 796-801 (2002)), and Qi (Qi, Optimum for extraction processing of stilbene glucoside from *Polygonum multiflorum*, *Zhongcaoyao* (2002), 33(7), 609-611).

This is a new rejection necessitated by the Applicant's amendment filed on 10/6/09.

Boralle et al teach extracting the seeds of *Gnetum venosum* by exhaustive percolation with EtOH (thus a solid-liquid mixture, an organic solvent, a polar organic solvent). The solution was evaporated (thus solid content is removed) and the residue partitioned between CHCl_3 , and MeOH. The solvents were evaporated. The residue of the CHCl_3 solution was fractionated first

by CC and finally by TLC. All compounds were purified by HPLC (see title; page 1407, 1st column, 5th paragraph). Boralle et al also teach Gnetum venosum contains, besides the stilbenes resveratrol and reponitigentin, oxidative stilbene oligomers such as the dimer gnetic C and the trimers gnetic E, gnetic J and gnetic K (see Abstract).

Boralle et al do not explicitly teach using 15-80% EtOH or 50% EtOH to extract Gnetum gnemon seeds, nor do Boralle et al teach mixing Gnetum extract to vegetable extract, or an aged Gnetum extract or more than 12 h.

Iliya et al teach the family of Gnetaceae is known to contain stilbenoids. The leaves and the fruits are used as food in many parts of tropics. Five new stilbenoids isolated from two species of Gnetaceae. Gnemonols A and B were obtained from the root of Gnetum gnemon. Gnemonol C, gnemonoside E and gnetal were isolated from both species (page 796, 1st column, 1st paragraph).

Berry teaches seed kernels of Gnetum gnemon, eaten after boiling or roasting the nuts (see Abstract). Berry teaches that nuts are starchy, astringent and rather bitter in taste that persists even after cooking. The kernels are eaten after removing the shell from the roasted or boiled nuts. They are mashed, moulded into cakes, biscuits or pounded flat into 'keropok' (crisps) which are dried in the sun (thus an aged Gnetum extract for more than 12 hours) and deep-fried in oil prior to consumption (page 44, 1st paragraph). Berry also teaches the young leaves of the plant are consumed as vegetable (page 44, 2nd paragraph).

Qi teaches stilbene glucoside was extracted from Polygonum multiflorum with 6.0-fold 50% ethanol by refluxing for 30 min. The effect of extraction on stilbene glucoside level was studied by HPLC. The level of stilbene glucoside in the extract was 2-3 times lower than that

before extraction. The content of stilbene glucoside in the extract was affected by extractant concentration and extraction time, preferably extractant concentration (see Abstract, the rejection is based on the Abstract, full translation is attached).

It would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to use ethanol (thus polar solvent) to extract stilbene from the seeds or seeds containing material from *Gnetum gnemon* since Boralle et al teach that it is from the seeds of the same genus *Gnetum*, stilbene was isolated. Further more, Iliya et al teach the family of Gnetaceae is known to contain stilbenoids, and stilbene was isolated from the root of claimed species *Gnetum gnemon*. Therefore, an artisan of ordinary skill at the time of the invention would have had a reasonably expected that the seeds or seed containing material of *Gnetum gnemon* has the sought properties, which are stilbenes, namely gnetin C, gnemonocide A and Gnemonocide D, and it is deemed that the claimed material stilbenes would necessarily have the claim designated antimicrobial and/or antioxidative function.

It would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to boil the *Gnetum gnemon* kernels (the same as seeds) and leaves (thus mixing with vegetable extract) together (thus a polar extract water) and then to consume since Berry teaches both the kernel and leaves can be eaten.

It would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to use 50% ethanol to extract stilbenoid since Qi teaches using 50% ethanol to extract stilbene glycoside (thus a stilbenoid) and the content of stilbene glucoside in the extract was affected by extractant concentration.

Since all of the references teach using plant materials from genus *Gnetum*, one of ordinary skill in the art would have been motivated to make the modifications and combine the references together.

Since the references teach extracting the claimed material *Gnetum* seeds with the claimed solvent ethanol, it is deemed that the extracts would intrinsically have the claimed absorption spectrum and Rf value.

The intended use of the composition was analyzed for patentable weight. It is deemed that the preamble 'breathes life' into the claims in that the prior art product must not be precluded for use as cosmetic or seasoning products. It is deemed that the composition disclosed by the cited reference is not precluded for carrying out the intended function of the claims.

From the teachings of the references, it is apparent that one of the ordinary skills in the art would have had a reasonable expectation of success in producing the claimed invention.

Thus, the invention as a whole is *prima facie* obvious over the references, especially in the absence of evidence to the contrary.

Applicant's argument regarding how the concentration of ethanol might affect the stilbenoid constituents is convincing. Therefore, the previous 103 rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Qi.

Applicant argues that "In addition to this, Iliya et al. does not search constituents in fruits of *Gnetaceae* which are utilized for food, but selects and extracts root of *Gnetum gnemon* and stem lianas of *G. gnemonoides* which are inedible. *Iliya does not test* the constituents

isolated from these extracts for *antimicrobial and antioxidative actions*, as shown in the quotation below. (Iliya Chem. Pharm. Bull. 2002, 50, p.800 col.1 and 2). (emphasis added by underline)" (page 6, last paragraph). Applicant also argues that " The constituents obtained from these materials differ from gnetonoside A, gnetonoside D and gnetin C contained in endosperms. The whole yields (underlined parts above) of the constituents from the root and the stem lianas were 0.08% and 0.0114%, respectively. *These results correspond to the yields of the extraction of endosperms with 99% ethanol* (run 10 in Table 1; run 1 in Table 3 - Comparison II-1)" (page 7, last paragraph).

This is not found persuasive. Iliya et al teach the family of Gnetaceae is known to contain stilbenoids, and stilbene was isolated from the root of claimed species Gnetum gnemon. Therefore, an artisan of ordinary skill at the time of the invention would have had a reasonably expected that the seeds or seed containing material of Gnetum gnemon has the sought properties, which are stilbenes, namely gnetin C, gnetonocid A and Gnetonocid D. As evidenced by Boralle et al, the seeds of Gnetaceae (Gnetum venosum) do contain stilbenes.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qiuwen Mi whose telephone number is 571-272-5984. The examiner can normally be reached on 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Qiwen Mi/

Examiner, Art Unit 1655